



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/524,856

02/18/2005

Tomoyasu Nishizaki

Q86415

3547

23373 7590 03/16/2007
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/524,856

Applicant(s)

NISHIZAKI ET AL.

Examiner

Justin R. Fischer

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 7, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teratani (JP 2002079803, of record) and further in view of Sattelmeyer (US 4,837,266) and Burke (US 4,131,584).

Teratani substantially discloses the claimed tire construction, including a pair of rubber reinforcing layers 7 (one in each sidewall) and a bead filler 5, wherein said layer 7 and filler 5 can be formed of the same rubber composition. The reference further teaches, in an analogous manner to the claimed invention, that the composition is formed of a conjugated diene based polymer having a high vinyl content and a weight average molecular weight and number average molecular weight in accordance to the

Art Unit: 1733

claimed invention. It is emphasized that the composition disclosed by Teratani and that detailed by the claimed invention are extremely similar to one another. Teratani, however, is silent as to the inclusion of a resin and a curing agent. These additives, however, are well recognized as being methylene acceptors (phenolic resins of the novolac type) and methylene donors (curing agent) and they are extensively used in a wide variety of tire rubber compositions in order to provide improved mechanical properties (e.g. modulus and tensile strength), as shown for example by Sattelmeyer (Column 1, Lines 10-35). It is particularly noted that the relevant compositions of Sattelmeyer are tire compositions that experience large amounts of dynamic deformation (well recognized as including runflat inserts). As such, one of ordinary skill in the art at the time of the invention would have found it obvious to include the above noted additives in the composition of Teratani since they are recognized as constituting well known and conventional additives that are included in a wide variety of tire rubber compositions. It is emphasized that methylene acceptors (e.g. phenol resin) and curing agents (e.g. HMMM or HMT) represent well known and conventional additives that are used in a variety of tire compositions in order to, among other things, provide improved mechanical properties.

In regards to the specific use of phenol-formaldehyde, it is well recognized that said formaldehyde represents one of the most common novolac type phenol resins. In this instance, the reference does suggest phenylphenol and furthermore, suggests the use of formaldehydes (Column 3, Lines 1-10). It is unclear, though, if the reference is expressly suggesting the use of phenol-formaldehyde. However, one of ordinary skill in

Art Unit: 1733

the art at the time of the invention would have recognized the general language of Sattelmeyer as including phenol-formaldehyde. Burke has been additionally applied to expressly recognize the general category of novolac resins (Column 5, Lines 10-25). It is emphasized that phenol-formaldehyde represents an extremely well known and extensively used methylene acceptor in the tire industry. Furthermore, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the specific resin used in the claimed invention.

With respect to the elastic modulus and dynamic modulus, while the references fail to expressly disclose values for these parameters, one of ordinary skill in the art at the time of the invention would have expected the composition of Teratani in view of Sattelmeyer to exhibit the claimed values as the compositions are extremely similar to that of the claimed invention. Additionally, there does not appear to be any unique processing that affects the above noted parameters- they appear to be a direct result of using the base composition of Teratani with a resin and a curing agent and as detailed above, such a composition would have been obvious in view of Sattelmeyer.

As to claims 2 and 3, Table 1 (Page 8) includes a plurality of embodiments in which the reinforcing rubber layer has a thickness between 6 and 13 millimeters, it being recognized that the claimed range is consistent with similar runflat tire constructions.

Regarding claims 5 and 6, one of ordinary skill in the art at the time of the invention would have found it obvious to use the claimed amounts of resin and curing agent as they are consistent with the loadings commonly used in tire rubber

Art Unit: 1733

compositions, as shown for example by Sattelmeyer (Column 3, Lines 45-55). It is additionally noted that the claimed ranges require a composition in which the amount of resin is at least equal to the amount of curing agent- one of ordinary skill in the art at the time of the invention would have expected such a relationship since the curing agent is provided to cure the resin.

Response to Arguments

4. Applicant's arguments filed March 7, 2007 have been fully considered but they are not persuasive. It is initially noted that Powell has been removed from the rejection and thus, the arguments with respect to Powell are moot.

As to Sattelmeyer, applicant argues that the reference only teaches curable phenolic resins but fails expressly disclose the use of phenol-formaldehyde. However, as detailed above, one of ordinary skill in the art at the time of the invention would have recognized the general language of Sattelmeyer (novolac type phenol resins) as including phenol-formaldehyde. Burke has been further applied to expressly recognize the relationship between novolac type resins and phenol-formaldehyde.

Applicant further argues that Figure A (graphical representation of the data in Table 1) provides a conclusive showing of unexpected results. As stated on Page 9 of the response, applicant contends the following:

Figure A clearly illustrates that the combination of a conjugate diene base polymer, which has a vinyl bonding amount of 25% or more, a phenol-formaldehyde resin and carbon black obtains a rubber composition having a higher elastic modulus in 100% elongation (100M) and a lower dynamic elastic modulus (E'), than the combination of a conjugate diene base polymer, which has a vinyl bonding amount of less than 25%, a phenol-formaldehyde and carbon black.

In this instance, however, the comparative example does not represent the closest prior art of record. As detailed above, the rubber composition of Teratani does in fact comprise a conjugate diene base polymer having a vinyl bonding amount of 25% or more. In regards to the additional comparisons, Table 1 fails to provide a conclusive showing of unexpected results. One of ordinary skill in the art at the time of the invention would have had ample motivation to include a methylene acceptor and a methylene donor in the rubber composition of Teratani and Sattelmeyer clearly attributes improved mechanical properties to the inclusion of such additives- the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1733

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Justin R Fischer
Primary Examiner
Art Unit 1733

JRF
March 13, 2007